Creating a Framework to Implement Community-Oriented Interventions to Address Health Inequities in a Rural Setting

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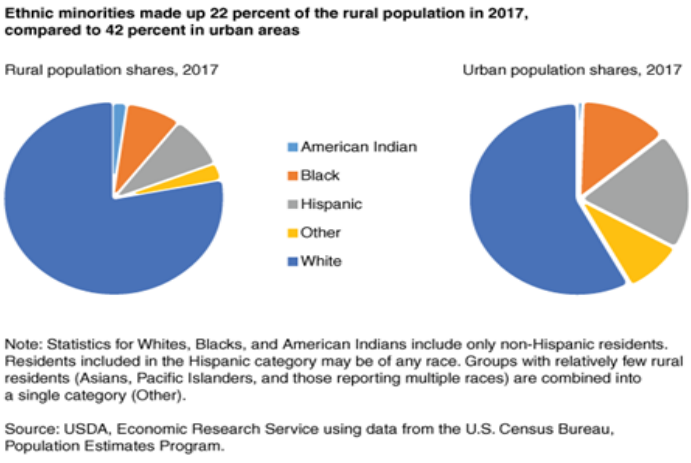
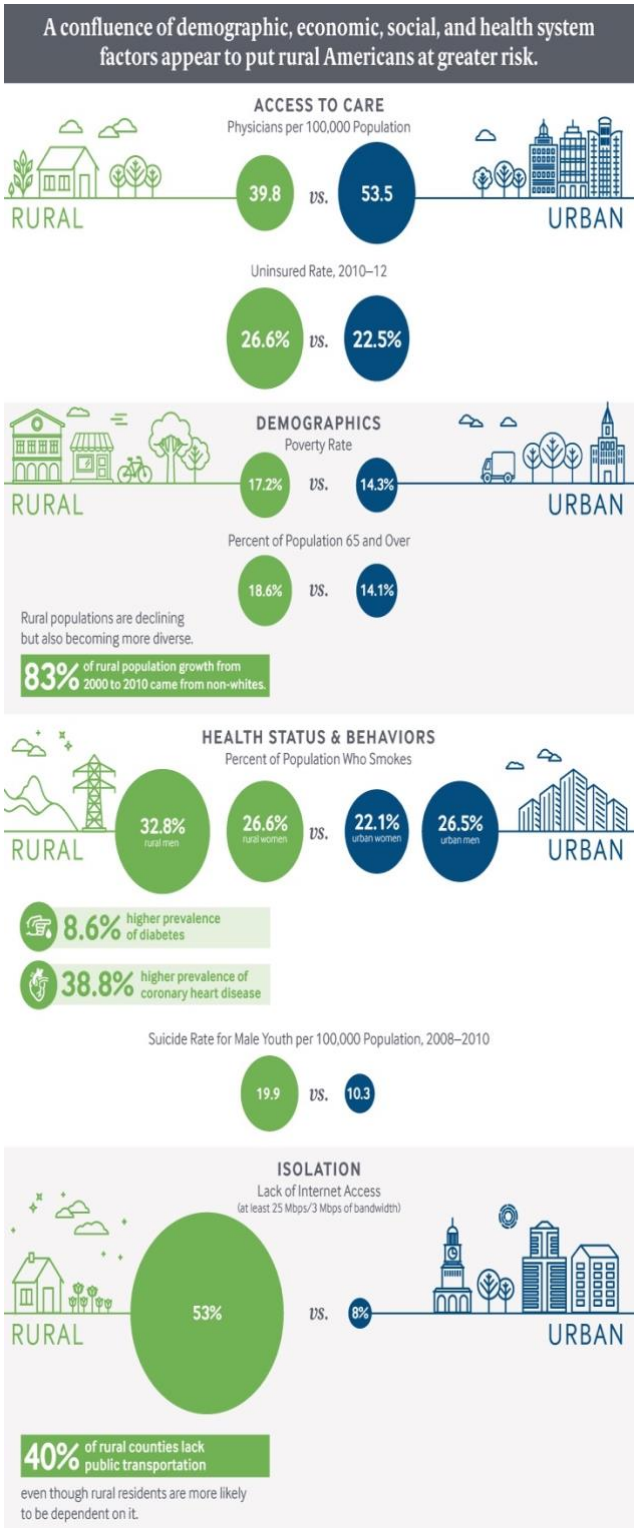
I. Background

Approximately 15% of the United States population live in rural areas and are at greater risk of dying from preventable chronic conditions and injury when compared to those living in urban America. Additionally, rural residents report less physical activity, higher rates of substance abuse and misuse, high blood pressure, and lower rates of seat belt use.[1] In addition, rural residents have higher poverty rates, are less educated, lack access to public transportation, have higher rates of food insecurity, higher rates of under or uninsured residents and poor access to health care[2,3,4,5] and by 2009, life expectancy for residents in large cities was 2.4 years longer than rural residents.[6]

The rural population has remained at approximately 46 million since 2013. Between 2012-2016, there were small population losses in rural areas before increasing in 2016-2017. Rural America is less racially and ethnically diverse than Urban America. The majority of the rural population is white (80%). Hispanics are the fastest-growing segment of the rural population; however, they make up only 9% of the population compared to 20% in urban areas.[7]





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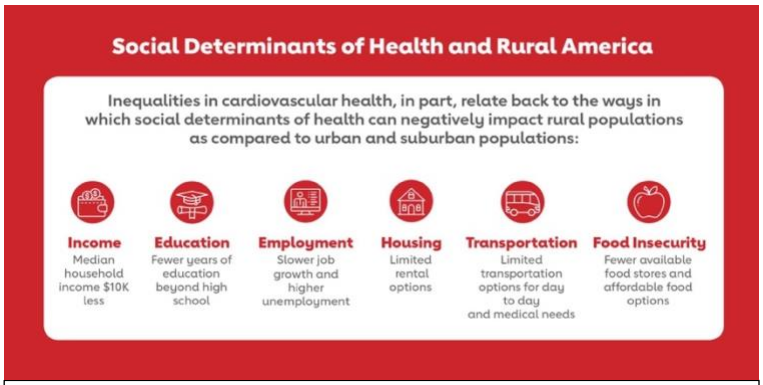
Traditionally the proposed solution to improving rural health outcomes and health inequities has been focused on health care. Proposed strategies often respond to health professions shortages, shoring up critical access hospitals and creating new payment models.[8,9] Improving access to care and treatment is necessary for healthy populations; however, evidence has shown that increased health care expenditures do not result in improved health outcomes. In 2019 the U.S. health care spending increased by 4.6% to $3.8 trillion. The average GDP spending on health care for developed countries is 8.8% compared to 16.9% for the U.S, yet it has the lowest life expectancy rate among the 11 nations.[10]

Additionally, compared to peer nations, the U.S. has the highest chronic disease burden, highest number of hospitalizations from preventable causes and the highest rate of avoidable deaths.[10,11] Furthermore, less than 3% of the $3.8 trillion is used for public health and prevention efforts. Public health spending as a proportion of total health spending has been decreasing since 2000.[12] Additionally, there is clear evidence that an investment in public health results in improved health outcomes.[13,14,15] It is estimated that an annual investment of $4.5 billion is needed to fully support the local, state, and tribal public health system.[16] Public health and healthcare work together to address the health inequities that exist in rural America. Rural residents must have access to quality care and have a robust public health system that can address the common community factors that impact their health like food insecurity, housing, transportation, education, safety, and income stability.



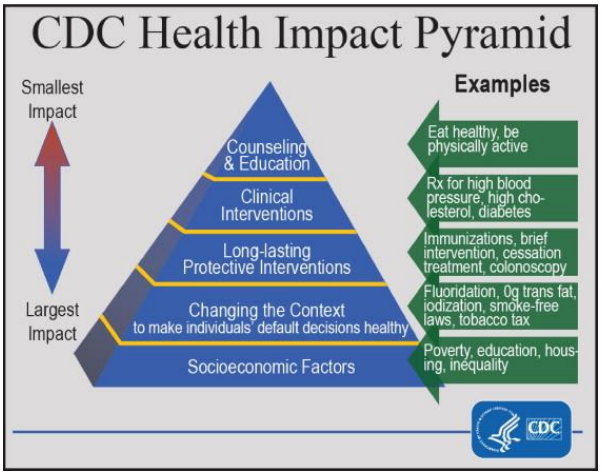
Used with permission from the American Heart Association (2021). https://newsroom.heart.org/news/american-heart-association-issues-call-to-action-for-addressing-inequities-in-rural-health

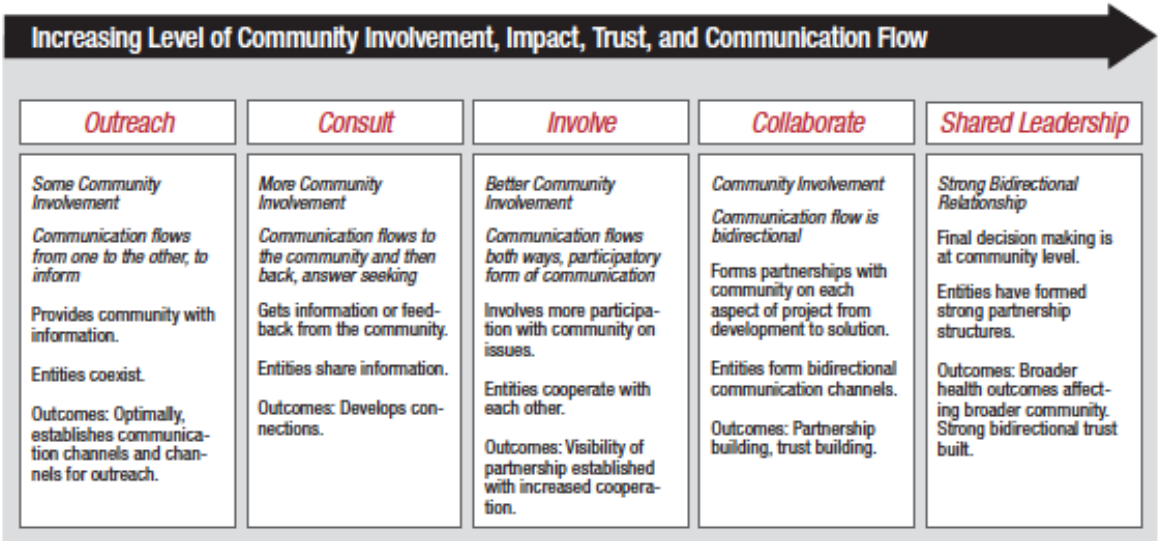
The purpose of this report is to provide recommendations and lessons learned for schools and programs of public health to build trusting relationships, strengthen the public health system and improve health and quality of life in rural communities.

The guide is an introduction and is not an exhaustive analysis of the work that is happening in all schools and programs. This guidance will focus on 1) Frameworks for Engagement, 2) Roles of Schools and Programs, and 3) Implementation Strategies.

II. Frameworks for Engagement

Addressing the inequities in rural communities requires program interventions and research to impact the socioeconomic factors.[17] Addressing the socioeconomic factors in a community requires a high level of community engagement to build trusting and authentic partnerships grounded in fairness, justice, empowerment, participation and self-determination.[18] There are several models and frameworks for the practice of engagement, including the guiding principles of partnership[19], community-based participatory research[20], community social capital, among others.[21,22] In addition to several models of community engagement, many partners can exist, including organized groups, agencies, institutions, businesses, individuals, nonprofits and many others. The priority for schools and programs of public health is to build relationships with those





Community Engagement Continuum. Agency for Toxic Substances and Disease Registry. (2011). Principles of Community Engagement (2eds). NIH Publication No. 11-7782. https://www.atsdr.cdc.gov/communityengagement/

organizations embedded in the community like local health departments and nonprofits because they have often spent time achieving the common goals of engagement with their community: 1) build trust, 2) enlist new resources and allies, 3) create better communication, 4) improve overall health outcomes.[18, 23] Additionally, they have also progressed along the continuum of community involvement.

III. Roles of Schools and Programs of Public Health

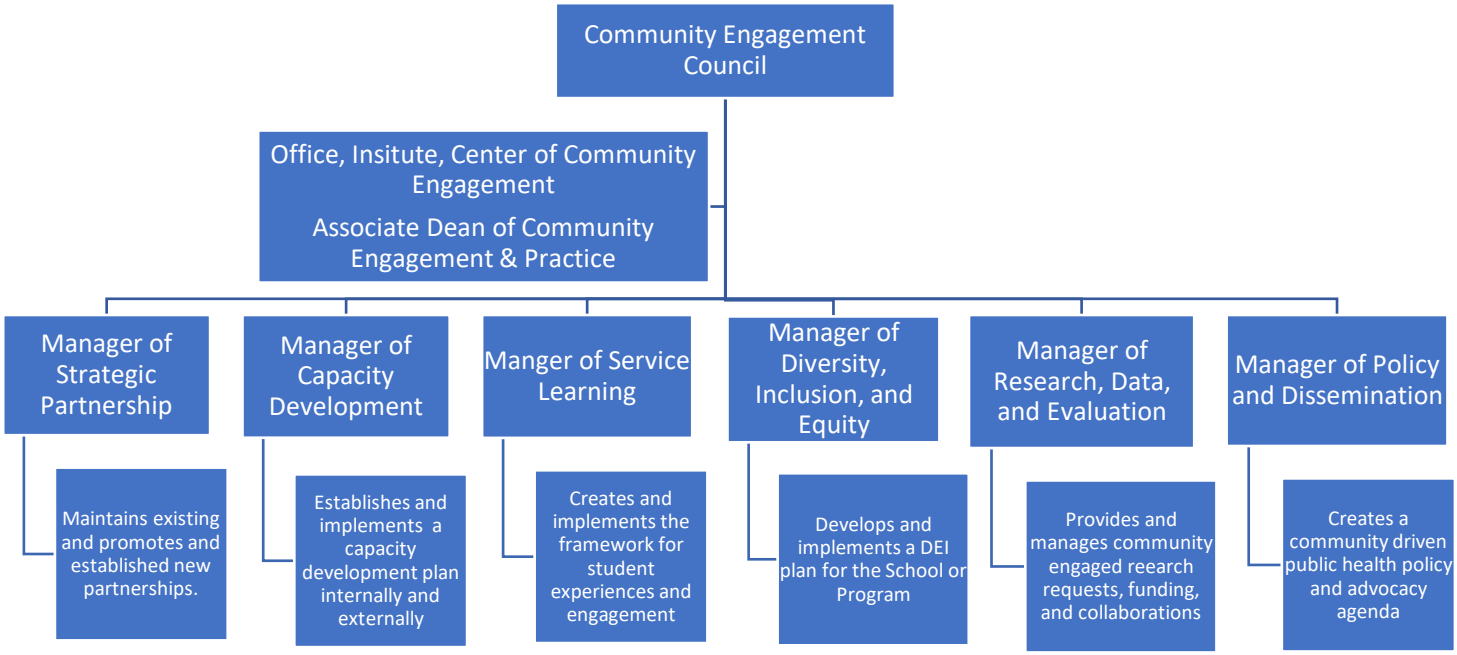
Leaders of the schools or programs must establish a commitment to and support for community engagement. The assurance of resources, staffing, strategic programming, and established metrics and policies demonstrate commitment.

a. Resources

A commitment to financial resources is essential to establish a quality community engagement agenda. Resources for travel, community-driven research projects, stipends, scholarships and funding for partners and students, technology to connect virtually, professional development, among others, is vital to create a culture of engagement.

b. Staffing and Oversight

In addition to an established leadership position (i.e., assistant/associate dean), adequate staffing is necessary to achieve the goals and objectives. Establishing a team that focuses on community engagement requires several levels. An example staffing plan is below. The most important entity of the proposed staffing plan is the community engagement council. The community engagement council should include community members, public health organizations, nonprofits, academe, and other community-based organizations. The council should have a formal structure with bylaws, metrics and participates in all phases of the community engagement agenda. An established relationship similar to this will lead to shared power, influence and trust.[24]



c. Strategic Programming

The next role is to include engagement into the mission, vision and goals of the school or program of public health and develop strategic programming with defined metrics. It is crucial to create strategic programming with the community engagement council, faculty, staff, and students. Co-creating the mission, vision and goals and values, and metrics will result in a culture of engagement. For example, the University of Michigan School of Public Health's mission statement is grounded in engagement:

> "The University of Michigan School of Public Health is pursuing a healthier world with compassion, innovation and inclusion to create meaningful, lasting impact."[25]

Additionally, Boston University School of Public Health's includes a value statement that supports engagement:

> "We are committed to igniting and sustaining positive change that leads to health and well-being around the world. We strive for a respectful, collaborative, diverse, and

> inclusive community within our School of Public Health. We aim to promote justice, human rights, and equity within and across our local and global communities".[26]

It is also essential that the entity (office, center, institute, program) organizing and leading engagement activities also have a mission, vision, and values that will guide their work. For example, the Institute for Public Health and Medicine at the Feinberg School of Medicine at Northwestern has established the strategic direction to:

> "Support a campus culture that encourages meaningful partnerships with community residents and stakeholders to understand their needs and priorities, guide our research, foster inclusive education and advance equitable access to cutting-edge clinical care in ways that serve to maximize the health and well-being of all people of Chicago, the state of Illinois and beyond."[27]

It is equally important that a strategic direction with metrics is established and evaluated. Unfortunately, the step of defining measurable metrics is challenging and one that is commonly skipped.[28,29] Measurable metrics should be developed related to the quality of the partnerships. It is suggested that metrics and evaluations measure the value of the partnership, community ownership, share power, trust, influence, participation, and any other metrics that the community would like to establish. Several evaluation tools and resources are available to assist with measuring and setting metrics in these areas.[18,30,31,32,33,34,35]

In addition to setting metrics for specific collaborations and partnerships, it is equally important to set metrics related to the engagement activities of the office, center, institute, etc. The community engagement council and the internal team should create yearly goals and objectives in each of the identified priority areas (i.e., capacity, student engagement, DEI, policy and dissemination, research).

d. Policies

Schools and programs of public health can also promote community engagement by prioritizing it in the promotion and tenure processes. School leadership and the promotion and tenure

committee should create criteria that allow community-engaged researchers the opportunity to be promoted for their work. It is recommended that criteria be established using the National Review Board of the Scholarship of Engagement activities.[36,37,38,39]

IV. Implementation Strategies

The University of Nebraska Medical Center College of Public Health (UNMC COPH) has used many of the strategies outlined that have resulted in sustained and trusted relationships with rural communities throughout the state. The following four sections will provide examples and lessons learned that could serve as best practices to engage rural communities to address health inequities: 1) Formal education and training, 2) Professional development and technical assistance, 3) Research and collaborative projects, and 4) Student support and field placements through APEx and Capstone.

a. Formal Education and Training

The UNMC COPH has used several strategies to enhance formal public health training throughout Nebraska. In 2001, Nebraska passed Legislative Bill 692, which used tobacco settlement dollars to establish Nebraska's local public health system. The settlement funding allowed the state to create a regionalized local public health system that covered all 93 counties and 1.9 million residents in Nebraska. With the launch of a new public health system came the opportunity to create a formal training program to provide technical skills to a new workforce. The University of Nebraska established first an MPH program and admitted the first students in 2002. This program was offered collaboratively by the University of Nebraska at Omaha and UNMC with support from the Nebraska Minority Public Health Association. The program was launched with the new workforce in mind and offered only evening courses. After the MPH program had built a solid track record and state leaders recognized the importance of public health training and research, the NU Board of Regents established the College of Public Health at UNMC in 2007. The MPH program migrated from a collaborative program to a standalone college with the approval of the Board of Regents in April 2010. During that time leading to formal approval of the college, the UNMC COPH learned that the MPH program was not accessible and did not meet the statewide workforce needs, especially in the rural and frontier

areas. As a result, in 2015, every program and concentration was offered both in-person and online.

With the expanded offering of courses online, the UNMC dedicated funding and resources to train all faculty in the principles and practices of online education and hired instructional designers. A requirement remains today that all online teaching faculty complete a 4-week course on course design, delivery, and teaching presence. Additionally, all online courses go through a comprehensive review of content, teaching methods, accessibility, and design to assure that online students receive an experience equitable to that of in-person students.

The provision of online education alleviated the access challenge, but it did not address the cost barrier. To reduce this barrier, the UNMC COPH established the Public Health Workforce Expansion Scholarship (PHWES) in 2016. The PHWES prioritized early- to middle-career professionals employed by public health-related nonprofits, the Department of Health and Human Services, local public health departments or federally qualified health centers in the State of Nebraska, working to improve the health of Nebraskans. Students awarded the PHWES receive tuition, fees and book purchasing support for the Certificate or/and MPH programs. Since 2016, the UNMC COPH has awarded40 students from across the state funding to complete a Certificate or MPH. Of those 40 students, 40% were from rural local health departments or nonprofits. Increasing the number of formally trained practitioners in rural areas has resulted in a workforce with enhanced skills and relationships with the COPH. This model shifts the approach of training practitioners and incentivizing them to work in rural and under-resourced areas to a model that trains individuals already working in the community. The alumni are committed, embedded, and invested in the health and wellness of their communities. As a result, the students have indicated that they feel better prepared to address the unique health needs of their communities, especially the health inequities that exist. In addition, the relationships with the college have resulted in more collaborative projects for faculty and Applied Practice Experience (APEx) projects for students.

Lessons Learned

1. Commitment from COPH leadership to make an investment of time, resources, and expectations.

2. Resources and dedicated funding are required for faculty training and instructional designer.
3. Comprehensive course review and evaluation are required of all online courses.
4. Distance-based education is needed to reach the rural workforce.
5. Deep-seated support of local health department leadership is necessary.
6. Dedicated funding to ease the cost barrier of formal education.
7. Expanded programming to support degree advancement options is a superior option for rural areas instead of relying only on recruiting new graduates. These programs allow existing health professionals serving in rural Nebraska to advance their degrees without leaving the workforce.

b. Workforce Development and Technical Assistance

Formal education and training are essential; however, it is not the only method for building the skills and competence of the current public health workforce. Therefore, Schools of Public Health must have a strong workforce development portfolio to build the capacity of current public health practitioners to respond and prevent the new and emerging threats in public health, like health equity.

Workforce development was a priority in Nebraska even before a formalized public health system or an academic training program in public health was developed. In 2000, the Nebraska Educational Alliance for Public Health Impact (NEAPHI) was established. The membership of NEPHI included over 30 representatives of numerous academic and practice organizations concerned with Nebraska's public health workforce training and education. The purpose of NEAPHI was to 1) build and sustain capacity in Nebraska to improve the public's health and 2) continually assess the current and future education and training needs of Nebraska's public health workforce and promote collaboration between academic and practice communities to address those needs statewide.

The goals were to:

1. Encourage and promote the development and delivery of educational programs to address unmet needs(e.g., short courses, certificate programs, graduate programs, and distance education).

2. Promote communication and collaboration between academic and practice communities.
3. Leverage resources to build and sustain the public health workforce infrastructure.
4. Provide opportunities for government officials and the general public to understand public health education and training needs.
5. Facilitate collaboration with national public health initiatives.
6. Encourage and assist with public health workforce recruitment and retention.
7. Encourage and advocate for cultural competence and diversity in the public health workforce.

The first project that NEAPHI launched was the Great Plains Public Health Leadership Institute www.greatplainsleadership.org (now the Great Plains Leadership Institute). The Great Plains Leadership Institute (GPLI) was established in 2005 and moved to the UNMC COPH Office of Public Health Practice (OPHP) in 2010. The Great Plains Leadership Institute (GPLI) is a year-long competency-based training program designed for established and emerging leaders in Iowa, Kansas, Missouri, Nebraska, and South Dakota whose primary mission is to improve the health and well-being of populations and communities. A robust experiential curriculum includes residential and distance learning, mentoring and coaching, and collaborative practice projects. Since 2005, the Institute has graduated over 300 individuals, with more than 40% being from rural communities. The sustainability of this program has led to many trusting relationships throughout the region in rural communities.

Faculty and staff of the OPHP also design and coordinate customized organizational development sessions, workshops and conferences. Examples of the topics and workshops offered by faculty and staff include:

- Leadership
- Conflict Management
- Team Development
- Leading Power and Influence
- Collaborative Leadership
- Appreciative Leadership
- Leading Change
- Mentoring
- Peer Coaching
- World Café
- Meeting Facilitation
- Conference Coordination

In addition to workforce development opportunities, the UNMC COPH Office of Public Health Practice also provides technical assistance to assure consistency and quality of the public health system. Technical assistance is provided in workforce development planning, PHAB

accreditation support, quality improvement, strategic planning, and systems change. It is equally important to provide support to assure local public health agencies and nonprofits are using quality measures, metrics, and procedures to address the health priorities in their communities - this is especially true for small rural health departments and nonprofits. Often, they do not have the staff or capacity to develop these processes independently, so the UNMC COPH has made it a priority to assist with this work. For example, the UNMC COPH manages a statewide accreditation grant that allows faculty and staff to support local health departments preparing for national accreditation. In the last five years, UNMC COPH has conducted over 15 workforce development plans, developed a learning collaborative for accreditation coordinators, conducted mock site visits, and assisted with quality improvement plans and documentation.

Addressing health inequities in rural communities requires a skilled and competent public health workforce. School and programs of public health are the natural fit to provide formal education, workforce development, and technical assistance. It is essential to invest in all these areas to build a solid and trusting partnership with rural communities.

Lessons Learned

1. There must be a council, workgroup, etc., made up of academe and practice partners to set the agenda for workforce development.
2. Creating a workforce development portfolio requires faculty and staff with expertise in transferrable skill areas like leadership, communication, quality improvement, systems change, among others.
3. The school must have a coordinated approach and system for responding to workforce development and technical assistance requests.

c. Student support and field placements through Applied Practice Experiences

Schools and programs can impact health equity in rural settings by making student placements a priority in rural communities and organizations. The UNMC COPH has committed to placing students in rural and under-resourced communities by dedicating funding and creating long-standing and trusting relationships. Each year the UNMC COPH can commit up to $35,000 for student stipends to those who complete their Applied Practice Experience (APEx) in a rural,

tribal or under-resourced community. The funding is a mix of federal support through the HRSA public health training center and philanthropic support committed to improving health outcomes in rural Nebraska. However, funding alone will not convince students to complete their experience in a rural community. Therefore, it is necessary to have a coordinated and thoughtful process for student and preceptor readiness, conception, implementation, and completion of the APEx.

Successful student placements require strong student commitment to prepare the student for meaningful engagement with a partner organization. Equally important is help offered to partner organizations and the representatives of those entities often referred to as preceptors. The APEx, a requirement of every Master of Public Health student, provides all students with an applied, scholarly, and mutually beneficial experience in a public health practice setting. This experience augments the academic coursework, meets community needs, and provides students with an opportunity to integrate and apply at least five foundational public health competencies. The UNMC COPH has used a community engagement process to assure that students and sites are prepared and comfortable with the experience. In the conception phase, a staff member hosts a general orientation for MPH students in the semester before the intended registration of the APEx course. The orientation helps prepare the students to design an APEx that aligns with the organization's needs, the student's interests, and ultimately the course requirements. During the orientation, students learn strategies about brainstorming organizations that may be a good fit, considering the student's long-term goals, any specific competencies or skills the student desires to focus on, among others. Additionally, the COPH APEx website hosts various resources for students to use, including previous APEx General Orientation.

Significant time is also required to connect with partner organizations to learn about the organization's priorities for possible student placement. Students can review and consider placement sites and needs on the Seeking Opportunities tab of the APEx webpage. Connections are made with partner organizations year-round, and annually, an informational session for new partner organizations is held.

As students progress through the APEx conception phase, they must complete online professionalism training modules that feature student etiquette, personal brand, email etiquette,

and in-person professionalism. These modules help the student prepare for communication with partner organizations. Once students have identified a potential partner organization, they may need to meet with them several times to define the project scope. Finally, the student describes the project scope in an APEx Learning Contract that includes project activities, products, timeline, and competencies to be met. The student works closely with the preceptor and the Office of Public Health Practice to develop the APEx Learning Contract and seeks approval from both parties.

The APEx implementation phase begins at the start of each semester upon completing orientation/kickoff sessions for students and preceptors. Students and preceptors also attend a debrief session at the end of the APEx. Throughout the APEx, tailored communication for students and preceptors has helped offer ongoing support. The students and preceptors provide evaluations and feedback during the APEx and upon the conclusion of the partnership. This continuous quality improvement practice has helped determine the preferred frequency of communication, content design for the orientations, among other positive improvements. For example, rather than live student presentations, pre-recorded short APEx Ignite presentations have allowed preceptors and students to view multiple APEx partnership presentations during a shorter amount of time and a time most convenient for each individual. A selection of rural and tribal health APEx Ignite Presentations is highlighted in Appendix A.

Lessons Learned

1. Designated staff support is critical for the development, implementation and evaluation of each APEx.
2. APEx course prerequisites are essential and help ensure student readiness before registration.
3. It is crucial to examine fit for both the student and the partner organization.
4. Federal and philanthropic funding is essential to prioritize rural and under-resourced communities.

d. Research and collaborative projects

The final way schools and programs of public health can impact rural health inequities is through research and collaborative projects. As with the previous strategies and recommendations schools and programs must commit to rural research, interventions, and collaborative projects. It is essential to listen to, engage with, and create a research agenda that will directly benefit the community.[40] While many schools and programs[41,42,43,44] have a centralized office, center or program for rural health that includes research and programming, it is not always necessary. If schools do not commit to a centralized office, developing a research agenda in several ways is possible.

1. Create a rural health faculty research interest group.
2. Develop an academic health department agreement with a rural local health department.
3. Build relationships and collaborative projects with the state office of rural health.
4. Launch a rural health research committee that includes academe, practice, and community partners.

An additional way a school or program can ignite rural health research is by providing internal funding opportunities to rural health research. For example, at the UNMC COPH, the dean's office provides innovation funds that faculty, staff, and community partners can apply. A requirement for these funds is that the faculty has to include a community member in the proposal. In addition, rural practitioners can also apply for the funding as long as they have a faculty or staff partner from the COPH. The innovation funds have resulted in sustained partnerships between faculty and community partners throughout the state. Examples of rural research completed or ongoing are migrant farming health, agriculture health and safety, environmental risk and evaluation, climate and drought, adolescent physical activity and nutrition, and youth vaping. Research is a great way to impact health outcomes in rural communities. However, it is essential that the research is driven by and benefits the community.

Conclusion

Traditionally the proposed solution to improving rural health outcomes and health inequities has been focused on health care. However, public health, specifically schools and programs of public health, has a role to play in improving health outcomes in rural communities. While schools and programs are not in the business of being direct service providers or being on the ground doing

the work of local and state health departments, they do have a role to play in education, research and service. The ability to impact health inequities in rural areas requires a great community engagement and practice portfolio. If a school does not have sustained and trusting partnerships with rural communities, it will be difficult to address health inequities and improve health outcomes. This guide provides schools and programs resources to consider when creating an agenda to impact health inequities in rural communities. The frameworks, roles, implementation strategies, and lessons learned are not the only ones that exist; however, they have worked at the UNMC COPH and several other schools working to impact rural communities. Schools and programs must use what will work for them. The most critical factor for success is ensuring the community is involved from conception and has shared power in decision making throughout.

Appendices

Appendix A

Applied Practice Experience (APEx) Ignite Presentations

The following is a selection of APEx Ignite presentations, which feature examples of rural and tribal public health partnerships within and outside of Nebraska.

1. **Student Name**: Echohawk Lefthand
   Partner Organization: Winnebago Health Department
   Title: What is Public Health
   Description: The APEx was held in partnership with the Winnebago Health Department. One product developed was a public health video that explained more about public health and the services and programs provided to the community. Another product was the development of a youth survey about mental and behavioral health access points.
   Presentation Link: https://youtu.be/fIoH1vJB9lg

2. **Student Name**: Jessica Hicks
   Partner Organization: North Central District Health Department
   Title: Creating a Mental Health Campaign for the NCDHD Community
   Description: For my APEx project, I worked with NCDHD in O'Neill, Nebraska. I helped create social media campaign materials that will bring awareness and education about mental health to their community. A survey was then designed to get community feedback on the materials. This project will help NCDHD meet accreditation requirements.
   Presentation Li**nk**: https://youtu.be/nZFcg1bzuVk

3. **Student Name**: Emily Girard
   Partner Organization: Nebraska Extension
   Title: Nitrates and Drinking Water
   Description: For my APEx, I worked with Nebraska Extension in Holt/Boyd counties. My project was under the Bazile Groundwater Management Area Project and their work on nitrate-contaminated drinking water. The products I developed were an infographic and social media posts about the issue.
   Presentation Link: https://youtu.be/t4ixBd8OE6w

4. **Student Name**: Jessica Davies
   Partner Organization: Panhandle Public Health District
   Title: COVID-19 Response in the Rural Nebraska Panhandle
   Description: [I had] an enlightening Summer 2020 APEx experience. This will be an influential time in our public health learning, given the COVID-19 pandemic. I'm grateful for leadership and advocacy opportunities that afforded me experience and a forum to learn and advance public health.
   Presentation Link: https://youtu.be/JgqJOiJ-Edo

5. **Student Name**: Erin Johnson
   Partner Organization: Harrison County Home and Public Health Department
   Title: APEx with Harrison County Home and Public Health Department

Description: My APEx at the Harrison County Home and Public Health Department taught me to work outside my comfort zone. I was comfortable working on the data analysis side. I had opportunities to network, think about policy, and hear what's concerning members of the county. This taught me what policy and advocacy work is about, and I enjoyed the time spent.
Presentation Link: https://youtu.be/H66sTVUsj94

6. **Student Name**: Korine (Korie) Nelson
   Partner Organization: Garrett County Health Department, MD
   Title: A Summer of Experience
   Description: I worked in the Health Education and Outreach division of the Garrett County Health Department. I was on-site one day a week for two months and did the rest virtually. I produced three products and was able to help in two community testing events for COVID-19. I did various tasks, learned a lot, sharpened my public health skills, and experienced a wonderful work environment.
   Presentation Link: https://youtu.be/SO-SAcDqiLE

7. **Student Name**: Tanner Wetzel
   Partner Organization: Feeding Brookings
   Title: Feeding Brookings - APEx
   Description: This APEx partnered with Feeding Brookings, a nonprofit food sustainability organization that offers services to the community. One product was the development of health brochures to be disseminated during food distribution. Another product was a blood-borne pathogens protocol for the organization.
   Presentation Link: https://youtu.be/B_iyQ9rKW6Y

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